REMARKS

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Rejection under 35 USC § 112, second paragraph

Claim 1 stands rejected under 35 USC 112, second paragraph, for being indefinite with respect to the term "valuable constituent." Applicants respectfully traverse this rejection.

The term "valuable constituent" is explained in the specification in several ways. By its plain meaning, it is a constituent that has some value, and is not a commercially "worthless material" as the contrast is made on page 3, lines 4-6. It is further stated there that each has different electrical, magnetic and thermophysical properties. Specific, non-limiting embodiments of "valuable constituents" are given in the specification, such as metal-comprising feed stock, e.g., ferrous and non-ferrous metals (page 17, lines 25-26), magnetite (page 31, line 18) and hematite (page 33, line 15).

Accordingly, applicant submits that the term "valuable constituent" as explained in the specification and used in the claims is not indefinite under Section 112, second paragraph.

Rejection under 35 USC § 103

Claim 1 stands rejected under 35 USC § 103 as being obvious from Ulrichsen U.S. Patent No. 7,262,380. Applicants respectfully traverse this rejection.

The method of the present invention as defined in claim 1 is based on the exposure of each lump of feedstock to microwave radiation, the finding of weight fraction of the valuable constituent by a defined formula, and the subsequent separation of the feed stock into two different streams, one where the valuable constituent is present in an amount not less than a threshold value, and another where the valuable constituent is present in an amount less than the threshold value. The application of the microwave radiation is conditioned by the fact that with ordinary heating the temperature of the valuable constituents rises as well as that of the commercially worthless materials, but with the use of microwave energy the components of the matter under analysis are heated differently, depending on their chemical composition, which allows differentiating between valuable constituents and commercially worthless materials according to the temperature of their heating.

The cited Ulrichsen patent discloses the use of reflected IR spectra and/or an electromagnetic field to inspect matter for varying composition. The only mention of microwave radiation in Ulrichsen is when it discusses the disclosure of U.S. Pat. No. 5,260,576 and EP-A-484, 221, where it notes that the source of penetrating radiation in this prior art may be a "microwave source" or other specified penetrating radiation sources. Column 3, line 64. Significantly, Ulrichsen never teaches that a microwave

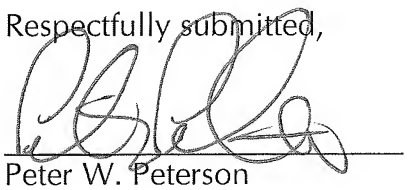
source may be used in its own method of inspection in place of or along with the reflected IR spectra or electromagnetic field. Accordingly, there is no suggestion of using microwave radiation in Ulrichsen's method.

In the method of the Ulrichsen patent, the result is received instantly upon registration of radiation that passed through the matter under analysis and reflected from its surface. On the other hand, in the present invention the moment of heating the lump and the registration of the radiation emitted by the matter under analysis are separated by a necessary damped time interval conditioned by the heat exchange processes between the components of the constituents being measured to determine the weight fraction of valuable constituent. Moreover, unlike Ulrichsen whose analysis is based upon registration of the reflected or passing IR or electromagnetic radiation, in the present invention the information about the constituents being measured is based upon the heat radiation of the constituents themselves after exposure to the microwave radiation. The present invention then calculates the weight fraction base on the recited formula taking into account the temperatures and heat capacity of the constituents. Ulrichsen neither discloses nor suggests any calculation of weight fraction or other measurement based on these parameters.

For these reasons applicants submit that claim 1 of the instant application is not obvious from the Ulrichsen patent.

It is respectfully submitted that the application is in a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,



Peter W. Peterson
Reg. No. 31,867

DeLIO & PETERSON, LLC
121 Whitney Avenue
New Haven, CT 06510-1241
(203) 787-0595
volo100001000AmendA